Report of Outcomes
of
Utah's Licensed Direct-Entry Midwives

January 6, 2006 through August 31, 2006

Prepared for the
Health and Human Services Interim Committee
of the
Utah State Legislature

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by the

Licensed Direct-Entry Midwife Board
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Introduction

When the Direct-Entry Midwife Act was enacted on May 2, 2005, it included a provision (58-77-201(3)(c)) requiring the Licensed Direct-Entry Midwife board to present an annual report to the legislature's Health and Human Services Interim Committee describing the outcome data of Licensed Direct-entry Midwives (LDEMs), to be continued through 2011. This document is the first such report to the committee.

Start-up Limitations

Because the rule-writing process was lengthy, the first license was not issued until January 6, 2006. So, rather than presenting a full year of data (from September 2005 through August 2006, the cutoff for data to be compiled into this report), this report includes data from only eight months, January 2006 through August 2006.

Because this is the first year of licensure, the number of midwives and births included is relatively small. While the first license was issued in January, 2006, others were issued later, and the license of one LDEM included in this report was not issued until June 2006. So, in addition to the number of births being small, the outcomes in this first report may be more heavily skewed toward earlier-licensed midwives because of the longer timeframe covered and their correspondingly larger opportunity to have data included.

A major task undertaken during the rules-writing process was the creation of requirements for LDEM consultation with, collaboration with, referral to, and transfer to other medical providers (as described in 58-77-601(2)). These "medical interaction" rules did not take effect until September 14, 2006. The time period of data submitted for this report was wholly prior to the adoption of the "medical interaction" rules. Therefore, we cannot report on the behavior of LDEMs relative to these rules and the outcomes associated with them. However, we do intend to include that in future reports.

Sources of the Data

As required in the statute (58-77-201(3)(c)(ii)), this report is based largely on data reported to and extracted from the Midwives Alliance of North America (MANA) statistical database. This database is a robust collection of information about the work of direct-entry midwives, including some eight pages of information on each course of care, comprising almost 500 individual data items for each client. This database has been used to conduct research published in national and international journals, such as the recent study "Outcomes of planned home births with certified professional midwives: large prospective study in North America," published June 18, 2005 in the *British Medical Journal*.

All clients for whom data is submitted to MANA must be "logged" upon their booking of services with the midwife. This prevents the midwife from excluding data on clients with poor outcomes. Once a client is logged, the midwife must account for the outcome of that client. The data are therefore considered prospective (the gold standard for research data) and studies resulting from it are considered strongly defensible.

Many of the LDEMs included in this first report were new to the MANA database when they received their license. There were substantial technical difficulties getting them set up and working with the database. We also had to deal with clients who were booked prior to the midwife's connection to the database (and therefore not able to be logged) but who were nevertheless delivered during the timeframe of this report and so had to be included. To compile this report, therefore, in addition to data from the MANA database we used data from forms that *would have been* included in the database but could not be submitted due to technical reasons, or in some cases other data forms reported by the midwives. We expect this problem to be greatly reduced if not eliminated by our next annual report.

Current Status of Licensed Direct-Entry Midwives

As of August 31, 2006, there were 10 LDEMs in Utah. During the period of this report, the LDEMs cared for 94 laboring mothers.

Outcomes

Transfers of Care

This report does not include data on clients who transferred out of the LDEM's care prior to the onset of labor because we did not advise the midwives we wanted them to provide this information. However, we intend to include information on these transfers in future reports.

Of the 94 clients who started their labors under the care of an LDEM, 6 (6.4%) were transferred to the hospital prior to the birth of the baby. All of these transfers occurred by private car; none were considered emergencies. Three mothers (3.2%) were transferred after delivery of the baby (2 by ambulance, 1 by car), all for hemorrhage. Two of these women's hemorrhages were stopped by the LDEM, but were transferred because they required IV fluids. They responded well and were released. One woman's hemorrhage was controlled but not stopped by the LDEM. After transfer she had a D&C (minor surgical procedure) for retained placental fragments.

One baby (1%) was transferred immediately after birth. The newborn was noted to be severely compromised, and was transferred by ambulance. After review and treatment by doctors, it was concluded that the infant had suffered oxygen deprivation sometime within two weeks of delivery. Although it was impossible to determine for certain whether the deprivation occurred during or prior to labor, the weight of the evidence supports the hypothesis that it occurred prior to labor. Such a prenatal event would have been impossible to detect by the midwife (or any care provider).

Overall, the transfer rate from LDEM care to hospital-based provider care once labor began was 10.6%. In 9 of the 10 transfers, the outcomes were good for both mothers and babies, with no residual problems at either 4 hours post-delivery (babies) or six weeks post-delivery (mothers and babies).

Cesarean Sections

Of the 94 laboring women under the care of LDEMs, 2 were subsequently delivered by c-section in the hospital. The outcomes for both babies and both mothers in the two c-section cases were excellent.

The overall c-section rate of LDEMs in this dataset is 2.1%. This is a remarkable statistic! For comparison, the national c-section rate is 29%[1], and Utah's overall c-section rate is 19%.

Breeches, Twins, and VBACs

Several parties have expressed concern about LDEMs delivering breech babies, twins, or mothers delivering vaginally after having had a c-section (VBAC–Vaginal Birth After C-section). The law does not prohibit LDEMs from conducting these deliveries. For the 94 clients under LDEM care in this dataset, 4 babies were breech, there were 2 sets of twins, and 2 deliveries were VBAC. One of the breech babies was discovered during labor, and the client was transferred to the hospital at the parents' request where she underwent a c-section, the mother and baby were fine. The rest of the babies were delivered at home by the LDEMs, also with excellent outcomes.

Use of Pitocin (Oxytocin)

Of the clients under LDEM care who did not transfer prior to birth of the baby (88), 10 (11%) received Pitocin (oxytocin) to stop a postpartum hemorrhage, as allowed by the statute (58-77-102(7)(f)(iv-v)). As discussed earlier, 2 of these mothers were transferred for IV fluids, and 1 was transferred for D&C. In all cases, however, there were no residual problems by six weeks postpartum.

[1]Center for Disease Control/National Center for Health Statistics: National Vital Statistics Reports, Volume 55, Number 1. Births: Final Data for 2004, September 29, 2006, p. 19.

Episiotomies

LDEMs are permitted to cut an episiotomy (to enlarge the vaginal opening) in an emergency (58-77-102(7)(k)(ii)). However, there were no episiotomies performed by LDEMs in this dataset.

APGAR Scores

The Apgar Score is a measurement of newborn well-being taken at 1 minute and 5 minutes after birth. For each of five features (breathing, heart rate, tone, color, reflexes) the newborn is scored 0, 1, or 2. The composite score, then, can range from 0 to 10, 10 being best. Any score 7 or above is a good score, with 9-10 an excellent score[2]. Generally, one-minute scores are lower than five-minute scores as the newborn transitions to extrauterine life and begins to engage his or her functions. For this report, we have tallied only five-minute scores because they are most predictive of the likelihood of significant complications.

Of the 90 babies born into the hands of LDEMs, the five-minute Apgar scores were as follows:

Apgar Score:	# of babies with that score at 5 minutes:
10	27
9	50
8	9
7	2
6	0
5	1
4	1
3	0
2	0
1	0

Note that all babies but 2 (97.7%) had a score of 7 or better at five minutes, with 85.5% scoring 9 or 10. This correlates very closely with the national rate of 88.8% of all babies scoring 9 or 10 at 5 minutes[3]. The one baby that scored 4 at five minutes had scored 8 at one minute, but between the 1- and 5-minute assessments he developed a clump of mucous in his airway that inhibited his breathing. Once this was discovered and cleared by the midwife, he recovered quickly and had no more problems. The other baby who scored 5 was discussed above under Transfers of Care (the baby who suffered the oxygen deprivation most likely prior to labor).

Newborn Complications

The MANA database tracks whether the newborn had any complications at four hours after birth, and within the first six weeks after birth. It also tracks whether the baby was hospitalized or in the Newborn Intensive Care Unit (NICU) within the first six weeks.

Only 1 of the babies in this dataset was found to have complications at four hours after birth (as discussed under Transfers of Care).

There were 3 babies who had residual problems at six weeks. The first was a baby who had an unusual presentation of Down's Syndrome (a genetic condition unrelated to the care provided) which was discovered by the pediatrician at day 33 after birth. This baby was in the NICU for 20 days following that discovery. The second was a baby whose pediatrician heard a heart murmur at two weeks, and was being followed for suspicion of Long QT Syndrome (also a genetic condition). At the time data was submitted, no diagnosis had been confirmed, and his providers were unsure whether the murmur would have any significance to the baby. This baby was not hospitalized and showed no symptoms other than the murmur. The third baby was the one who suffered the oxygen deprivation (as discussed under

[2]Center for Disease Control/National Center for Health Statistics: National Vital Statistics Reports, Volume 55, Number 1. Births: Final Data for 2004, September 29, 2006, p. 24.

[3]Center for Disease Control/National Center for Health Statistics: National Vital Statistics Reports, Volume 55, Number 1. Births: Final Data for 2004, September 29, 2006, p. 24.

Transfers of Care). Although this baby spent 17 days in the NICU, by six weeks the only residual problem the baby experienced was some difficulty breastfeeding.

Maternal Complications

There were 4 mothers in the dataset who had infections after delivery. Two of these mothers were transferred to hospital prior to delivery, where one of them acquired a urinary tract infection from the catheter inserted at the hospital. The third and fourth mothers acquired a yeast infection and urinary tract infection (also from catheter insertion) at home. None of these infections required hospitalization. The only other hospitalization was the aforementioned D&C on the mother who hemorrhaged due to retained placental fragments, and who was fully recovered by six weeks postpartum. No mothers in this dataset had residual problems by six weeks postptarum.

Analysis

Although the time period of this report is fairly short and the numbers fairly small, the outcomes of Utah's Licensed Direct-Entry Midwives are excellent. Although there were 2 babies and 1 mother with complications serious enough to require hospitalization, none of these were preventable or a result of inappropriate care provided by the LDEM. Necessary transfers to hospital were handled in a timely way with good outcomes. LDEMs continue to have a remarkably low c-section rate (one-tenth the rate of other Utah providers) with no increase of compromised babies. Outcomes of breech, twin, and VBAC deliveries were excellent. LDEMs appear to be using Pitocin safely and appropriately, with no injuries. Episiotomy is not being routinely performed (there were none in this dataset). The condition of babies following their delivery by LDEMs is generally excellent with an average 5-minute Apgar score of 9.05 (out of 10), and their mothers fared equally well with all mothers well recovered at six weeks post-delivery.